

L Number	Hits	Search Text	DB	Time stamp
1	14	(H2SO4 or sulfuric) with (H2O2 or peroxide) with (sulfonic or sulphonic) with etch\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/31 15:52
	6159	(H2SO4 or sulfuric) with etch\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 15:48
	1575	(H2SO4 or sulfuric) with (H2O2 or peroxide) with etch\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/31 15:50
	0	phenyltetrazole with ((chloride adj (sodium or potassium or ammonium)) or hydrochloric or HCl or NaCl or KCl or NH4Cl) with etch\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 15:53
	2	tetrazole with ((chloride adj (sodium or potassium or ammonium)) or hydrochloric or HCl or NaCl or KCl or NH4Cl) with etch\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 16:20
	23	tetrazole and ((chloride adj (sodium or potassium or ammonium)) or hydrochloric or HCl or NaCl or KCl or NH4Cl) with etch\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 16:21
	134085	438/\$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 17:30
	520	438/\$.ccls. and ((H2SO4 or sulfuric) with (H2O2 or peroxide) with etch\$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 17:27
	305	(438/\$.ccls. and ((H2SO4 or sulfuric) with (H2O2 or peroxide) with etch\$3)) and @pd<=20000725	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 17:31
	440	((H2SO4 or sulfuric) with (H2O2 or peroxide) with etch\$3) same (Cu or copper)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 17:30
	55	438/\$.ccls. and (((H2SO4 or sulfuric) with (H2O2 or peroxide) with etch\$3) same (Cu or copper))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 17:30
	13	(438/\$.ccls. and (((H2SO4 or sulfuric) with (H2O2 or peroxide) with etch\$3) same (Cu or copper))) and @pd<=20000725	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/30 17:31

	10766	rough\$5 with etch\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/31 12:14
	0	(rough\$5 with etch\$3) and 438/%.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/31 12:14
	1665	(rough\$5 with etch\$3) and 438/\$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/31 12:14
	873	((rough\$5 with etch\$3) and 438/\$.ccls.) and @pd<=20000725	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/01/31 12:16

US-PAT-NO: 6013572

DOCUMENT-IDENTIFIER: US 6013572 A

TITLE: Methods of fabricating and testing silver-tin alloy solder bumps

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Referring back to FIG. 7, the UBM 14 that is exposed by removal of the photoresist 16 is etched. The etch process comprises a first etch to etch the copper layer 12, and a second etch to etch the titanium layer 11. The first etch is carried out at a temperature of 25.degree. C. for 40 seconds using a first etch solution comprising 15 ml sulfuric acid, 55 ml of hydrogen peroxide and 930 ml of deionized water. The second etch is carried out at temperatures of 25.degree. for 120 seconds using a second etching solution comprising hydrogen fluoride, that is mixed at a rate of 1:300.

CLIPPEDIMAGE= JP02000282265A

PAT-NO: JP02000282265A

DOCUMENT-IDENTIFIER: JP 2000282265 A

TITLE: MICROETCHING AGENT FOR COPPER OR COPPER ALLOY AND
SURFACE TREATING
METHOD USING THE SAME

PUBN-DATE: October 10, 2000

INVENTOR-INFORMATION:

NAME	COUNTRY
ONO, HIDEICHIRO	N/A
NAKAMURA, SACHIKO	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
MEC KK	N/A

APPL-NO: JP11092924

APPL-DATE: March 31, 1999

INT-CL (IPC): C23F001/18;H05K003/38

ABSTRACT:

PROBLEM TO BE SOLVED: To facilitate a process control, moreover to roughen the surface of copper or a copper alloy and to improve the adhesive strength with a prepreg or the like by composing the etching agent of an aq. soln. contg. a main agent composed of an inorganic acid and an oxidizer for copper and an assistant composed of at least one kind of azoles and at least one kind of etching inhibitor.

SOLUTION: Preferably, the inorganic acid is composed of hydrochloric acid, sulfuric acid, nitric acid, phosphoric acid, chloric acid, sulfamic acid, boric acid or boric-hydrofluoric acid, the oxidizer for copper is composed of hydrogen peroxide, ferric chloride, cupric chloride or a peroxy compd., the

azoles are composed of diazole, triazole, **tetrazole** or their derivatives, the **etching** inhibitor is composed of phosphorous acid, hypophosphorous acid, pyrophosphoric acid or their salts, an organic compd. having a phosphonic group, pyridine, a pyridine derivative, an aromatic compd. having an amino group, a saturated ring compd. having a nitrogen atom or a compd. having a sulfur atom.

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